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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,236	10/30/2000	Philip DesJardins	PA1472	2644

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EXAMINER

VARTANIAN, HARRY

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/704,236

Applicant(s)

DESJARDINS ET AL.

Examiner

Harry Vartanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/30/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-16, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 13, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____  |

**Detailed Action**

***Claim Objections***

1. Claims 8-9 recites the limitation "the endpoint device". There is insufficient antecedent basis for this limitation in the claim. Please change to "the endpoint devices" or "the first and second endpoint device".

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 recites the limitation "per codeword". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Morris et al(United States Patent# 6,314,535). Regarding Claim 1, Morris et al meets the following limitations:

a framing coordinator for creating a decreasing redundancy data packet having a increasing ratio of message symbols/ redundant symbols over the length of the packet; and **Abstract; (Column 17, lines 14-20); (Column 6, lines 11-35)**

a transmitter for transmitting the decreasing redundancy data packet over the network. **Abstract**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims are 2-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535). Morris et al meets all the limitations of the Claims except describing the exact adjustment of the coding rate(or ratio) by either adjusting the overhead or the payload. Morris et al does describe increasing the data traffic while decreasing overhead, and vice versa(Column 17, Lines 17-22). However adjusting the coding rate by changing the overhead or payload is a design choice and is well known in the art to those of ordinary skill in the art.

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4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535) in view of Cai(US Pat 6,205,410). Morris et al meets the following limitations of the Claim:

a transmitter coupled to the block error correction calculator for transmitting a schedule request packet over the network, the schedule request packet including the redundancy requirements of the transceiver as determined by the block error correction calculator to inform a transmitting network device of the redundancy requirement of the transceiver. **Fig 8b, abstract**

Morris et al fails to teach the use of a slicer for determining SNR and the block correction system using SNR to determine overhead.

However, Cai discloses the use of a slicer to determine SNR of a received packet(Column 1, Lines 44-50) (Column 4, lines 16-30). Furthermore, Morris et al states that his system uses BER as one metric to determine FEC overhead(Column 2, Lines 49-61). Through the works of Shannon and Nyquist, there is a well-known direct relationship between BER and SNR. Therefor it would have been prima facie obvious for a slicer to determine SNR of a packet and this information to be used to determine overhead. The motivation to combine is that it is well-known in the art that a slicer's main purpose is to make decisions on received bits, with SNR being one metric in the decision process, and that SNR is a common metric used in error correction decisions.

5. Claims 6-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535) in view of Klayman et al(US Pat# 5,699,365). Morris et al meets the following limitations of Claim 6:

a broadcaster device coupled to a network for broadcasting data over the network according to a framing schedule; **fig 4b, 8b, abstract**

a first endpoint device coupled to the network for receiving the broadcast data, the first endpoint device having a first redundancy requirement; **fig 4b, 8b, abstract**

a second endpoint device coupled to the network for receiving broadcast data, the second endpoint device having a second redundancy requirement; **fig 4b, 8b, abstract**

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Morris et al fails to specifically describe the coordination of error correction between the remote and central devices.

However, Klayman et al meets the following limitations of the Claim:

the broadcaster being configured to determine the framing schedule based on the greater of the first and second redundancy requirement. **(column 9, line 56 to column 10, line 26)**

Therefor it would have been prima facie obvious for Morris et al's adaptive FEC system to monitor the redundancy requirements of the remote devices. The motivation to combine is implied by Klayman wherein without the feedback from ALL devices, the newly adaptive FEC rate may not be compatible with all remote devices causing errors.

Regarding Claim 7, Klayman meets the following limitation of the Claim:

the block error correction is performed utilizing Reed-Solomon coding. **(Column 5, lines 55-59)**

Regarding Claim 8, the rejection for Claim 6 above meets the limitations of the Claim.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535) in view of Klayman et al(US Pat# 5,699,365) furtherer in view of Cai(US Pat 6,205,410). Morris et al and Klayman meet all the limitations of Claim 9, except disclosing the use of a slicer.

However, Cai discloses the use of a slicer to determine SNR of a received packet(Column 1, Lines 44-50) (Column 4, lines 16-30). Furthermore, Morris et al states that his system uses BER as one metric to determine FEC overhead(Column 2, Lines 49-61). Through the works of Shannon and Nyquist, there is a well-known direct relationship between BER and SNR. Therefor it would have been prima facie obvious for a slicer to determine SNR of a packet and this information to be used to determine overhead. The motivation to combine is that it is well-known in the art that a slicer's main purpose is to

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make decisions on received bits, with SNR being one metric in the decision process, and that SNR is a common metric used in error correction decisions.

7. Claims 10, 14-16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535). Morris et al meets the following limitations of the

Claim 10:

determining a first redundancy requirement for a first endpoint device, the first redundancy requirement comprising an increasing ratio of message symbols/ redundant symbols over the length of a packet; **Abstract; (column 17, lines 14-20)**

determining a second redundancy requirement for a second endpoint device, the second redundancy requirement comprising an increasing ratio of message symbols/ redundant symbols over the length of a packet; **Abstract; (column 17, lines 14-20)**

selecting a framing schedule based on the redundancy requirement having the greatest amount of redundancy; and **fig 4b, fig 5a, 6; (Column 20, Line 63 to Column 21, Line 14)**

transmitting data packets over the network to the first and second endpoint devices according to the framing schedule. **Abstract**

Morris et al fails to teach the use of a framing schedule with the greatest or highest amount of redundancy communicated by the endpoint devices. However, it is common knowledge in the art that this would be an inherent requirement since the highest redundancy is the limiting factor in establishing reliable links between the central station and ALL remote devices. Morris et al does talk about compatibility of the central and remote devices, where he states:

"On the other hand, if the FEC dynamic central station processor 112' determines that the selected error correction algorithm should not be employed, such as, if the selected error correction algorithm is not compatible with the wireless communication system 100 or the available overhead or central station does not support the error correction algorithm, the downlink control data indicates denial of the selected error correction algorithm." **(Column 20, Line 63 to Column 21, Line 14)**

Using the highest redundancy is typical requirement of meeting compatibility.

Regarding Claims 14-15, the rejection for Claim 10 addresses the limitations of the Claim.

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Regarding Claim 16, Morris et al meets the following limitations of the Claim:

the step of sending the framing schedule to the endpoint devices. **Fig 8b, abstract**

Regarding Claims 19-20, the rejection for Claim 10 meets the limitations of the Claim.

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al(US Pat 6,314,535) in view of Cai(US Pat 6,205,410). Morris et al meets all the limitations of Claim 11(see above paragraphs) except the use of a slicer for determining SNR and the block correction system using SNR to determine overhead.

However, Cai discloses the use of a slicer to determine SNR of a received packet(Column 1, Lines 44-50) (Column 4, lines 16-30). Furthermore, Morris et al states that his system uses BER as one metric to determine FEC overhead(Column 2, Lines 49-61). Through the works of Shannon and Nyquist, there is a well-known direct relationship between BER and SNR. Therefor it would have been prima facie obvious for a slicer to determine SNR of a packet and this information to be used to determine overhead. The motivation to combine is that it is well-known in the art that a slicer's main purpose is to make decisions on received bits, with SNR being one metric in the decision process, and that SNR is a common metric used in error correction decisions.

***Allowable Subject Matter***

5. Claim 13, 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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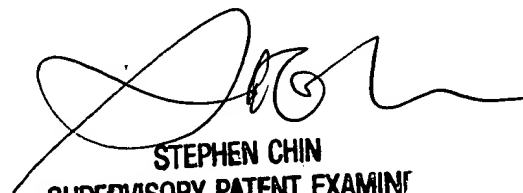
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian  
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HV



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